

33. MARSHALL, W. S., AND SEVERIN, H. H. P., 1904. Some Points in the Anatomy of *Ranatra fusca* P. Beauv. *Trans. Wis. Acad. Sci. Arts and Letters*, XIV, pp. 487-508.
34. MIALL, L. C., 1895. The Natural History of Aquatic Insects, pp. 353-5.
35. PACKARD, A. S., 1877. Half Hours with Insects, p. 158.
36. PETTIT, R. H., 1902. The Egg of the Water Scorpion (*Ranatra fusca*). *Can. Ent.*, XXXIV, pp. 212-3.
37. SHARP, D., 1899. Cambridge Natural History. VI, pp. 563-7.
38. SLATER, F. W., 1899. The Egg-Carrying Habit of *Zaitha*. *Am. Nat.*, XXXIII, pp. 931-3.
39. WEED, C. M., 1889. Article II. Studies in Pond Life. *Bull. Agr. Exp. Sta. Tech. Series*, I, pp. 4-17.
40. WESTWOOD, J. O., 1840. An Introduction to the Modern Classification of Insects, pp. 460-2.

---

## THE RESURRECTION OF *THYANTA CALCEATA* SAY FROM SYNONYMY.

BY H. G. BARBER,  
ROSELLE PARK, N. J.

Professor E. B. Wilson, of Columbia University, in his researches concerning the chromosomes of the germ cells of the species of *Thyanta* frequenting the eastern United States, came to the conclusion, from certain constant differences in the chromosomes, that there were two distinct, but closely related species of this genus which have hitherto been incorporated under *Thyanta custator* Fabr.<sup>1</sup> He turned all of his specimens over to me, including four specimens of *T. perditor* Fabr. from Jamaica, W. I., with the request that I work out the differentiation of the two species. At the same time Professor Wilson pointed out to me certain differences in the shape of the scutellum by which alone he was able to separate the two species.

Since receiving this material I have endeavored to gather speci-

<sup>1</sup> Professor Wilson states in his paper before the Seventh International Congress in 1907, printed 1909, that he is readily able to differentiate the two species from a microscopical examination of their germ cells, as *T. calceata* has 27 chromosomes in the male and 28 in the female, while *T. custator* has 16 chromosomes in both sexes.

mens of this genus from various parts of the United States and I have spent much time and studied several hundred specimens in the endeavor to characterize the two confused species. But although I can pick them out easily, from a difference in their general shape, I have found it difficult to fix upon well marked constant structural characters which will always serve to differentiate them.

There is no doubt that the *Thyanta custator* Fabr. is a very plastic, variable and widely distributed species while the other species which has been confused with it, is more restricted in its distribution and more constant in its characters. *T. custator* described by Fabricius from Carolina (Syst. Rhyng., 164, 1803) occurs all over the United States south of New York and becomes abundant in the South and in the West, where it is subject to much more variation than our eastern specimens. In the West, more rarely in the southeastern United States, this species has the humeral angles frequently spinose and varies much in color, ranging from green through testaceous to rufescent as in the Lakehurst, N. J., specimens. The purple-red pronotal band is subject to much variation, being absent entirely or very conspicuous, with the humeral angles, costal margins of corium and apex of scutellum frequently reddish. Furthermore, the western specimens are inclined to be less hairy or setose. There is little doubt, in my mind, that it is specimens of this species with the spinous humeral angles which have been referred to by systematists in this



Fig. 1. Scutellum of *Thyanta calceata* and that of *Th. custator*.

country as *Thyanta perditor* Fabr., which species I believe does not occur within the limits of the United States either in the southeast or southwest.

After a careful comparison of specimens with the descriptions I am convinced that the other species of *Thyanta* referred to as occurring in the eastern United States and which has been so long sunk in synonymy is *T. calceata* Say, the type of which is not in existence,

as that author mentions in his description one of its most prominent and constant characters, viz., the black lateral edge of the pronotum and the purple-red pronotal band as well as a few minor characteristics. Moreover, Herrick-Schaeffer's description and figure of *T. custator* Fabr. pertains without doubt to *T. calceata* Say, so it should be placed as a synonym of that species and the arrangement should be as follows:

*Thyanta custator* Fabr., Syst. Rhyng., 164, 1803.

*Thyanta calceata* Say, Hem. New Harm. Ind., 765, 1831. Syn.

*Thyanta custator* Fabr. Herrick-Schaeffer, Wanz. Ins., VII, 96, 106, fig. 771, 1844.

*Thyanta calceata* Say is uniformly smaller and proportionately shorter than *T. custator*, subshining and uniformly dark green in all of the mature specimens I have seen. The lateral edge of the prothorax is always narrowly black and with an almost constant, conspicuous, purple-red band between the humeral angles on the dorsal surface of the pronotum. The scutellum, as shown in Fig. 1, is relatively shorter in this species and the narrow apical portion not so attenuated as in *T. custator* and concolorous. The lateral margins of head, pronotum, abdomen and the legs less setose. The second and third joints of the antennae subequal in length, with the first two joints pale green, third and base of fourth segment rufous and the apex of fourth and fifth infuscated. The two black points are more or less evident in the cicatrix of the pronotum. The membrane is frequently without fuscous spots, similarly to *T. custator*.

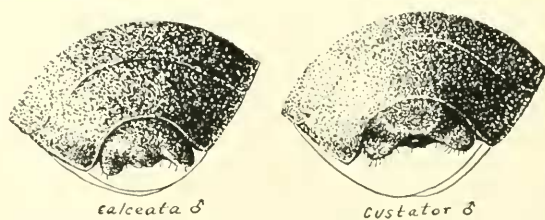


Fig. 2. Posterior segments of male *Thyanta calceata* and *Th. custator*.

The genital segment of the male, as shown in Fig. 2, is proportionately narrower, more convex ventrally and with the two lateral lobes not so divergent internally, apically more rounded and with

the ventral surface of these lobes less pinched in or appressed; the sinus between them narrower and the slightly notched central lobe more prominent as viewed ventro-posteriorly as it is more sharply convexed.

*T. calceata* Say seems to be confined to the territory east of the Appalachians, and judging from the localities from which I have seen material, appears to be more characteristic of the highlands and mountainous districts, while *T. custator*, at least in the East, occurs more in the low lands.

Professor Wilson has collected *calceata* at Madison, N. J., where it is fairly common in the fall, Black Mt. and Southern Pines, N. C. Professor W. E. Britton has loaned me a specimen taken at New Canaan, Conn., which is the farthest north from which I have any record, although Professor Uhler has reported *T. custator* which is probably *calceata* in the Harris Collection from Cambridge, Mass. In my own collection are specimens from Madison, N. J., and Cold Spring Harbor, Long Island.

*T. custator* ranges across the United States from New York in the North and Florida in the South to Oregon, California and the Southwest. I have not seen specimens from northern New York or New England. Professor Wilson has this species from Southern Pines and Black Mt., N. C., Savannah, Ga., Memphis, Tenn., Colorado and Arizona. One specimen from Black Mt. has the humeral angles spinose. I have this species from Lakehurst, N. J., the northernmost point in my records, Thomasville, Ga., Enterprise and Leon, Fla., Pass Christian, Miss and from various points in the West where it is more abundant, as Dakota, western Nebraska, Missouri, Texas, Arizona, California and Oregon.

---

## PYRRHOCORIS APTERUS LINN. IN THE UNITED STATES.

BY H. G. BARBER,

ROSELLE PARK, N. J.

*Pyrrhocoris apterus* Linn. has a wide range in the old world. In 1883 Mr. W. L. Distant, in the Biol. Cent. Amer., p. 414, states: